

What is claimed is:

1. An as-grown single crystal of calcium fluoride obtained by a single crystal pulling method and having a straight barrel part diameter of 17 cm or more and a  
5 birefringence of not more than 3 nm/cm.
2. The as-grown single crystal of calcium fluoride as claimed in claim 1, wherein the standard deviation of the birefringence is not more than 2.0 nm/cm.
- 10 3. The as-grown single crystal of calcium fluoride as claimed in claim 1, wherein the straight barrel part has a length of not less than 5 cm.